國立臺灣大學95學年度碩士班招生考試試題

(1) 將下段文字翻譯成中文 （50%）

The Earth system is composed of four parts: the atmosphere, the hydrosphere, the biota, and the solid Earth. The atmosphere is a thin envelop of gases that surrounds Earth. The hydrosphere is composed of the various reservoirs of water, including ice. The biota include all living organisms. (Some ecologists define the biosphere as the entire region in which life exists, but we will avoid that term here because it overlaps our other system component.) The solid Earth includes all rocks, or consolidated mixtures of crystalline materials called minerals, and all unconsolidated rock fragments. It is divided into three parts: the core, mantle and crust. Earth's core is a dense mixture of metallic iron and nickel; and is part solid, part liquid. The mantle is a thick, rocky layer between the core and crust that represents the largest fraction of Earth's mass. The crust is the thin, outer layer, which consists of light, rocky matter in contact with the atmosphere and hydrosphere.

(2) 將下篇短文翻譯成中文 （50%）

In the 1960s the plate tectonics revolution explained how mountain building is driven by the horizontal movement of vast blocks of the lithosphere - the relatively cool and brittle part of Earth's exterior. According to this framework, internal heat energy shapes the planet's surface by compressing, heating and breaking the lithosphere into dozens of plates, which varies in thickness from 100 kilometers or less below the oceans to 200 kilometers or more below the continents. Driven by heat from below, these plates move with respect to one another, accounting for most of our world's familiar surface features and phenomena, such as earthquakes, oceanic basins and mountains.

Earth scientists have by no means discarded plate tectonics as a force in mountain building. Over the past few decades, however, they have come to the conclusion that mountains are best described not as the results of tectonics alone but rather as the products of a system that encompasses erosional and climatic processes in addition to tectonics ones and that has many complex linkages and feedbacks among those three components. Because of the importance of mountain building in the evolution of Earth, these findings have significant implications for earth science. (Excerpt from Scientific American)

試題隨卷繳回